Mental Health and Marginalization Stress in Transgender and Gender Diverse Adults: Differences between Urban and Non-Urban Experiences

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Abstract

Background: Transgender and gender diverse (TGD) individuals face high rates of psychological distress, including depression, anxiety, and suicide risk. Further, TGD individuals living outside of urban areas experience additional disparities compared to their urban counterparts. Minority stress theory states that minority stressors (termed marginalization stressors for this paper), such as experiences of discrimination and internalized transphobia, lead to psychological distress. The current study compared marginalization stressors across rural (population less than 2,500), urban cluster (population between 2,500 and 50,000), and urban (population greater than 50,000) samples and tested the degree to which these stressors account for differences across areas of residence. Methods: Participants were 225 TGD individuals who completed an online survey that included measures of depression, anxiety, suicidal ideation marginalization stress, and protective factors. Results: In the first model, mental health outcomes, marginalization stressors, and protective factors differed between areas. Urban cluster participants reported experiencing higher levels of depression, anxiety, and suicidal ideation and rural participants reported experiencing higher levels of depression suicidal ideation than urban participants. Both rural and urban cluster participants reported more experiences of several marginalization stressors. In the subsequent path model, indirect effects between area and marginalization stress variables were significant, but urban cluster participants still reported higher depression, anxiety, and suicidal ideation symptoms (*p*-values < .05). Discussion: We demonstrate that marginalization stress processes appear to account for some of the differences between TGD individuals living in urban, rural, and urban cluster areas. The differences between areas largely persist, however, after controlling for marginalization stress, especially when comparing urban with urban cluster areas.

*Keywords:* transgender and gender diverse, mental health, minority stress, marginalization, transgender, gender minorities, rural, urban, urban cluster

Public Significance Statement

 The results of this study demonstrate there are differences in experiences of marginalization stress, anxiety, depression, and suicidal ideation in transgender and gender diverse adults living in rural, urban cluster, and urban areas. These findings have important implications in understanding the unique ways in which area of residence influences experiences of marginalization stress and negative mental health outcomes and suggest clinicians should consider these factors in case conceptualization, assessment, and treatment of anxiety and depression.

Mental Health and Marginalization Stress in Transgender and Gender Diverse Adults: Differences between Urban and Non-Urban Experiences

 In the past few years, transgender and gender diverse (TGD)[[1]](#footnote-2) communities have been a focus of media outlets, research studies, and social justice initiatives, shedding light on the unique experiences of these communities including that of marginalization stress. Due to increased marginalization stress, TGD communities experience suicide, depression, and anxiety at disparate rates compared to their cisgender (Valdiserri et al., 2018) and lesbian, gay, and bisexual (LGB) counterparts (Borgogna et al., 2018; Mathy, 2002b). Lifetime rates of depression in TGD communities are high (44%-50%; Bockting et al., 2013; Nuttbrock et al., 2010) and 44% have reported attempting suicide compared to 5% of the general population (Miller & Grollman, 2015; Nock et al., 2008). Prevalence rates of anxiety are also elevated with some studies showing point prevalence (e.g., last 7 days) rates of anxiety ranging from 33.2% to 47.5% (Bockting et al., 2013; Budge et al., 2013) and over half of TGD people in other research report moderate to severe levels of anxiety and depression (Puckett et al., 2019). Despite these high disparities, many TGD people live healthy fulfilling lives, especially if they are able to access gender- affirming medical care, if this is part of their gender affirmation (Bränström & Pachankis, 2020).

 The best explanation for heightened psychological distress among TGD communities is Meyer’s minority stress model, adapted by Hendricks and Testa (2012). Minority stress was outlined by Brooks (1981) and Meyer (2003) to refer to the additional stress experienced by members of a marginalized group due stigma and discrimination associated with group membership. It was initially used to identify mechanisms for physical and mental health disparities across gay, lesbian, and bisexual cisgender communities and has subsequently been applied to numerous other marginalized groups. Here, we use the term marginalization stress to better center the stressful experience on the marginalization factors perpetrated on minority or other marginalized group members rather than their identities as minorities. This terminology also comports with the expressed interests of community groups who have been vital in the development of the current research.Meyer’s model conceptualizes marginalization stress occurring through distal and proximal stressors. Hendricks and Testa (2012) expanded the Meyer model to the unique stressors, such as misgendering, experienced by individuals who identify as TGD. An iteration of this model was eventually named the gender minority stress and resilience (GMSR) model (Testa et al., 2015).

 Distal stressors are external stressful events, such as harassment and victimization. Specifically, examples of distal stressors TGD individuals are likely to experience include discrimination and rejection surrounding their gender identity. The range of discriminatory and stigmatizing experiences of TGD individuals are varied, but relative to their cisgender counterparts they include: greater physical and sexual violence victimization with perpetrators frequently explicitly referencing gender identity as a motivation (Bradford et al., 2012; Grant et al., 2010; Nutbrock et al., 2010); more frequent denial and/or loss of employment (Budge et al., 2010; Grant et al., 2010); harassment due to their gender identity/gender identity expression (Clements-Nolle et al., 2006; Grant et al., 2010); greater fear of accessing public restrooms (Gleason et al., 2016; Scheim et al., 2014); higher rates of homelessness (Gleason et al., 2016); denial of healthcare and mental health services, including explicit denials based on gender identity (Bauer, 2012; Bauer et al., 2014; Bradford, et al., 2012; Grant et al., 2010); and encountering services that are not affirming of their gender (Grant et al., 2010; Holt et al., 2018). These experiences are commonplace for TGD people, with as many as 3 out of 4 TGD people reporting some form of discrimination over the past year (Puckett et al., 2020). For the purpose of this paper, distal stressors will be referred to as distal marginalization stressors.

Unlike distal stressors, proximal stressors include internalized processes such as internalized stigma, expectations of rejection, and identity concealment. Specific, proximal stressors that TGD individuals are likely to experience include concealment of their gender identity, gender expression, or transition history, often to avoid harassment and intimidation, and internalized transphobia (Hendricks & Testa, 2012; Testa et al., 2015). Internalized transphobia is a process wherein a TGD individual integrates negative beliefs about their gender identity into their own self-views, as a product of social stigma, often leading to self-blame and low self-esteem (Hendricks & Testa, 2012; Rood et al., 2017; Testa et al., 2015). Both processes have been shown to increase TGD individual’s risk for mental health problems including anxiety, depression, and suicide risk (Bockting et al., 2013; Tebbe & Moradi, 2016.; Testa et al., 2017). For the purposes of this paper, proximal stressors will be referred to as proximal marginalization stressors.

Spurred from Meyer’s model, there is growing theoretical and empirical work delineating the links between marginalization stress and mental health outcomes, perhaps most notably suicide. Testa and colleagues (2012) have linked gender marginalization stress, resilience, and Joiner’s interpersonal-psychological theory of suicide to understand heightened suicide risk in TGD populations. Both Testa and colleagues’ and Joiner’s models suggest interpersonal factors (e.g., thwarted belongingness and perceived burdensomeness) likely contribute to depression and suicidal ideation and behaviors. Testa and colleagues also integrated protective factors leading to resilience. These two resiliency factors include how connected TGD individuals feel to their community (e.g., community connectedness) and how much pride TGD individuals feel about their gender identity (Testa et al., 2015). The current model was partially based on a model constructed by Testa and colleagues (2017) examining the relationship between distal marginalization stressors and suicidal ideation with proximal marginalization stressors mediating these relationships.

 Another theoretical contribution is Hatzenbuehler’s (2009) psychological mediation framework which proposed mediators connecting distal and proximal marginalization stressors to increased psychological distress. A key potential mediator is difficulties with emotion regulation, such as rumination. Rumination is a response style to stress that involves persistent thinking (Nolen-Hoesema, 2008). The most studied type of rumination is depressive rumination which Nolen-Hoeksema (1991) defines as “behaviors and thoughts that focus one's attention on one's depressive symptoms and on the implications of these symptoms (p. 569).” Unlike other adaptive forms of reflection, this ruminative response to depression does not lead to active problem solving but rather fixation on the problem and emotions related to the problem without an attempt to solve the problem. These ruminative thoughts are generally negative, much like the negative cognitive styles that are typically associated with the cognitive theory of depression and cognitive therapy (Beck, 1967, 1979). Many studies have shown that rumination is related to higher levels of depression (e.g., Nolen-Hoeksema et al., 2008; Takano & Tanno, 2009) and anxiety (Abbott & Rapee, 2004; Fresco et al., 2002).

 Rumination related to minority status has been studied within sexual minority communities, with results demonstrating that marginalization stress places sexual minorities at a higher risk than their heterosexual counterparts for developing a maladaptive, ruminative coping style (Hatzenbuehler, 2009). This work has been extended to TGD communities, examining their unique experiences of stigma and the impact this has on rumination. Bauerband and Galupo (2014) sought to disentangle the unique experiences of rumination related to gender that TGD people experience, specifically the extent to which a person thinks about their gender identity. They found a significant relationship between gender rumination and experiences of stigma, consistent with previous findings of the relationship between experiences of stigma and rumination (Hatzenbuehler et al., 2009). This suggests rumination might play a role in the impact of proximal stress, specifically the idea that rumination may impact experiences of stigma and sensitivity toward stigma-related stress (Bauerband & Galupo, 2014). Since gender-related rumination is conceptualized similarly to depressive rumination, we hypothesize that greater presence of gender-related rumination will be associated with more depressive symptoms.

Despite the expanding literature on marginalization stress and TGD people overall, there is little research at the intersections of different identities, such as examining rural versus urban TGD communities’ experiences. Research on seemingly cisgender populations demonstrates disparate rates of mental health disorders and mental health service seeking behaviors between rural and urban populations (Carpenter-Song & Snell-Rood, 2016). The U.S. Census Bureau (2010) classifies two types of urban areas, urbanized areas and urban cluster areas. Urbanized areas are comprised of areas of 50,000 or more people and urban cluster areas are comprised of areas of at least 2,500 and less than 50,000 people. Rural areas are defined as “all population, housing, and territory not included within an urban (or urban cluster) area.” There are many ways to classify rural and urban areas, for this study we chose the U.S. Census Bureau categories. In one study that compared rates of marginalization stress among LGB individuals in different geographic location, rural LGB individuals reported higher rates of felt stigma and discrimination and felt less connected to other LGB individuals compared to their urban counterparts (Swank et al., 2012). It is unknown whether the experiences of TGD individuals vary across urban, urban cluster, and rural areas of residence in a similar manner.

Although limited data are available, the intersection of rural and TGD identities may be associated with even higher prevalence of mental health disorders compared to urban TGD people. Irwin and colleagues (2014) found 66% of rural TGD participants in Nebraska had considered suicide. Further, while one study found rates of suicide attempts are similar between rural and urban transgender men, rural transgender men endorsed significantly more symptoms of depression (Horvath et al., 2014). An application of Meyer’s model suggests that rural environments may come with an elevated risk of exposure to marginalization combined with a lack of protective factors such as a supportive TGD community or resources such as affirming mental health care, which then may compound disparities found in rural areas.

 Rarely has research examined the relationship between rural status and experiences of marginalization stress simultaneously. Further, much of the broader research examining these variables has been conducted within aggregated samples of LGBT communities. This makes it difficult to determine factors specific to TGD communities. However, the intersection of individuals who identify as TGD and their non-urban status may impact their mental health. For example, TGD people who live in urban areas often have greater access to other TGD-identified people, therefore increasing their ability to create strong support networks. These support networks likely aid in navigating their identity formation and buffering the impact of experiences of discrimination.

 As such, the overarching goal of the present study is to examine the impact of area of residence on experiences of marginalization stress and subsequent negative mental health outcomes such as anxiety, depression, and suicidal ideation. Explicitly, through a set of three models, we have three primary aims. The first aim of the study was to determine whether there are differences in negative mental health outcomes (e.g., anxiety, depression, suicidal ideation) between areas of residence. Specifically, we hypothesized that rural and urban cluster participants will evidence greater degrees of anxiety, depression, and suicidality than urban participants. The second aim of the study was to determine whether there are differences in experiences of gender-related distal marginalization stressors and protective factors. Specifically, we hypothesized that rural and urban cluster participants will experience higher levels of gender-related marginalization stressors and have lower levels of protective factors than people living in urban areas. The third aim of this study was to determine whether distal and proximal marginalization stressors would account for significant portions of the relationship between area of residence and negative mental health outcomes and if protective factors moderate these relationships. Specifically, we hypothesized: (a) area of residence would predict distal marginalization stressors with those living in non-urban areas experiencing higher levels of distal marginalization stressors, (b) distal marginalization stressors would positively predict proximal marginalization stressors such that higher levels of distal marginalization stressors would be associated with higher levels of proximal marginalization stressors, (c) proximal marginalization stressors would positively predict negative mental health symptoms, such that higher levels of proximal marginalization stressors would be associated with more negative mental health symptoms, and (d) protective factors would moderate these relationships such that compromised protective factors would be associated with more negative mental health symptoms.

**Method**

**Participants**

The current study consisted of a national sample of 225 TGD participants who completed measures of gender-related marginalization stress, depression, anxiety, and demographics listed below. The survey asked participants to describe the area in which they reside as an urbanized area: 50,000 or more people (U.S. Census Bureau, 2010), urban cluster: at least 2,500 people but less than 50,000 people (U.S. Census Bureau, 2010), or rural area: encompasses all population housing and territory not included within an urban or urban cluster area (U.S. Census Bureau, 2010). There were 197 participants who answered the question asking them to describe the area where they live. Eighty-seven participants (38.7%) reported living in an urban cluster area, 25 participants (11.1%) reported living in a rural area, 72 participants (32.0%) reported living in an urban cluster area, 13 (5.8%) preferred not to answer this question and 28 (12.4%) did not answer the question. The average participant age was 30 and ranged from 19 to 73. All participants reported that their age was above 19, the Nebraska age of majority, but 73 participants did not disclose their age.

Participants were given space to describe their gender identity and then asked to select a forced-option category that best describes their gender identity. Seventy-six (33.6%) identified as a transwoman/trans woman/MTF/woman, 76 participants (33.6%) selected transman/trans man/FTM/man, 46 participants (21.4%) identified as non-binary/gender nonconforming/genderqueer/agender/bigender/another gender minority, and 27 participants (12%) chose not to answer in the forced choice. A much broader array of identities that are too diverse to categorize for quantitative analyses were reflected in the free response space.

A wide range of sexual orientations were represented in the sample: 97 participants (43.1%) identified as straight/heterosexual, 32 participants (14.2%) as gay, 21 participants (9.3%) as bisexual, 16 participants (7.1%) as lesbian, 15 participants (6.7%) as queer, 6 participants (2.7%) as pansexual, and 4 participants (1.8%) as asexual. Six participants (2.7%) offered their own description of their sexual orientation which included “celibate,” “gray asexual,” “homoflexible (mostly gay),” “interested in women,” “queer,” and “self-sexual only, but attracted to queer females and nonbinary AFAB.” Twenty-eight (12.4%) participants did not answer the question about their sexual orientation.

 Eleven (4.9%) participants identified as African American/Black, six (4.0%) participants identified as Asian American including Pacific Islander, 149 (66.2%) participants identified as European American/Caucasian/White, two (0.90%) participants identified as Hispanic, 10 (4.4%) identified as Latino/a/x, and ten (2.71%) participants identified as Native American/American Indian, Alaskan Native. Eleven participants (4.9%) selected at least two racial/ethnic identity categories suggesting a biracial or multiracial identity with one of these participants writing “multiracial.” Twenty-eight (12.4%) participants did not answer the question describing their race/ethnicity.

 **Procedure.** Data were collected as part of a larger study in October and November 2017. Recruitment emails were sent to LGBT organizations across the United States and posted to LGBT list-serves and social media that included an anonymous link to the survey, hosted on Qualtrics. The recruitment notice called for TGD-identified participants over the age of 19 to participate in a study that paid participants $10. Individuals who accessed the link confirmed they identified as TGD or another gender minority and met the age criterion. Those who consented proceeded to the survey. Participants completed series of questionnaires assessing depressive symptoms, anxiety marginalization stress and protective factors, and some measures used for another study from this dataset (Holt et al., 2019). The individual measures were presented to each participant in a random order to reduce order effects. Participants then completed demographics and two measures on gender embodiment and naming, unrelated to the current study (Obasi et al., 2019). Participants who opted to provide an email address were sent a $10 online gift card within 24 hours. After payment, participants’ email addresses were deleted from the data set.

 Two-hundred and ninety-seven people opened the survey, 270 people consented to participate, and 225 participants answered at least one measure included in the analyses within the survey. Examination of Qualtrics metadata and reported demographics indicated the 225 included no duplicate responses. Median completion time for the 225 participants was 23.58 minutes. One hundred and ninety-nine people opted to provide an email address for payment purposes.

**Measures**

**Depressive symptoms and suicidal ideation.** The Patient Health Questionnaire-9 (PHQ-9) is a 9-item, self-report scale that assesses depression symptom severity. The scale asks respondents to record how bothered they were by each symptom in the past 2 weeks on a scale ranging from 0-3 (0 = “Not at all”, 1 = “Several days”, 2 = “More than half the days”, 3 = “Nearly every day”). Item 9 on the PHQ-9 assesses for suicidal ideation and was used to represent suicidal ideation in the analyses. The PHQ-9 has displayed excellent internal consistency (Cronbach’s α = .86-.89; Kroenke et al., 2001) and excellent test-retest reliability (Kroenke et al., 2001). The PHQ-9 has previously been used with TGD samples (Bazargan & Galvan, 2012; Tucker et al., 2018). Internal consistency for the current sample was good (α =.84).

**Anxiety symptoms.** The GAD-7 is a 7-item, self-report measure of generalized anxiety disorder (GAD) symptoms. The scale asks respondents to record how bothered they were by each symptom in the past 2 weeks on a scale ranging from 0-3 (0 = “Not at all”, 1 = “Several days”, 2 = “More than half the days”, 3 = “Nearly every day”). The GAD-7 has displayed excellent internal consistency (Cronbach’s α = .92; Spitzer et al., 2006) and good test-retest alt reliability (*r* = .83; Spitzer et al., 2006). The GAD-7 has also demonstrated good convergent validity with other measures of anxiety. For example, the Beck Anxiety Inventory (*r* = .72; Spitzer et al., 2006) and the anxiety subscale of the Symptom Checklist-90 (*r* = .72; Spitzer et al., 2006). In the current sample, internal consistency was good (α = .81). The GAD-7 has previously been used in TGD samples (Borgogna et al., 2018).

**Gender-related reflection and rumination.**The Gender Identity Reflection and Rumination Scale (GIRRS; Bauerband & Galupo, 2014) assessed how often participants think about their gender identity and was a marker of gender-related emotion regulation. The GIRRS includes 15 items that span three subscales: reflection about gender identity, rumination about gender identity, and preoccupation with other’s thinking. Higher scores suggest greater thinking, either positively or negatively, about one’s gender identity. Internal consistency for the subscales ranged from poor to fair (α = .55 for reflection, .61 for preoccupation, and .71 for rumination). As such, due to the poor internal consistency for gender-related reflection and preoccupation these variables were dropped from final analyses.

**Gender-related marginalization stress and resiliency.**The Gender Minority Stress and Resilience Scale (GMSR; Testa et al., 2015) was used to assess several marginalization stress domains and positive aspects of gender minority identities. The GMSR has 58 items that contribute to 9 subscales: gender-related discrimination, gender-related rejection, gender-related victimization, non-affirmation of gender identity, internalized transphobia, negative expectations for the future, nondisclosure (of one’s gender identity), pride (in one’s gender identity), and community connectedness. The subscales are scored independently and higher scores on each subscale indicate more experiences or alignment with the target domain. Internal consistency was acceptable or good for most of the subscales (α = .75 to .87). For nondisclosure and community connectedness, internal consistency was poor with Cronbach’s alpha ranging from .50 (community connectedness) to .65 (nondisclosure). Therefore, these variables were dropped from final analyses.

**Area.** Rurality/urbanicity was assessed with a single item with four response options: urban area (50,000 or more people, coded 0), urban cluster areas (at least 2,500 people but less than 50,000 people, coded 1), rural area (areas with less than 2,500 people, coded 2), or prefer not to answer. Throughout this paper when referencing the non-urban areas, we are describing those who selected rural or urban cluster combined.

**Data Analysis Plan**

 Data were analyzed using Mplus (Muthén & Muthén, Los Angeles, CA, 1998-2017) and Full Information Maximum Likelihood (FIML) estimation to address missing data which is considered superior to other methods of handling missing data (Enders & Bandalos, 2001). Missing data were minimal (covariance coverage ranged from .68 to .93). Three models were conducted to test the hypotheses, and in each model, area was “dummy-coded” with urban as the referent group. Age was also included as a covariate in each model as age significantly correlated with all study variables (*p*s < .05). To test hypothesis 1 and 2, a model was constructed with area of residence as predictors of mental health outcomes, marginalization stressors, and protective factors. To test hypothesis 3, two models were constructed similar to that of Testa and colleagues (2017), with area of residence predicting distal marginalization stressors, distal marginalization stressors predicting proximal marginalization stressors, , and proximal marginalization stressors predicting negative mental health symptoms in model 2. Model 3 was identical to model 2 but included protective factors as a moderator.

 In the second and third models a bootstrap approach was implemented. Bootstrapping maximizes power while minimizing Type 1 error rate (Shrout & Bolger, 2002). Bootstrapping also provides an empirical approximation of sampling distributions of indirect effects to produce confidence intervals (CI) of estimates. If zero does not fall within the CI, one can conclude, an indirect effect is different from zero. To account for violations of normality, we performed a nonparametric resampling method (bias-corrected bootstrap) with 5000 resamples drawn to derive the confidence intervals for indirect effects (Preacher et al., 2007). All direct effects were also retained (e.g., distal marginalization stress variables predicting mental health outcomes). Following recommendations by Fritz and MacKinnon (2007), we first examined significant direct effects and then indirect effects.

 To assess global fit, multiple indices were used. Comparative Fit Index (CFI; Bentler, 1990), Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1992), and Standard Root Mean Residual (SRMR; Hu & Bentler, 1995). For the CFI, values of .90 or greater reflect adequate fit of the model. For the RMSEA and SRMR, values of .05 or less indicate good fit, values up to .08 indicate reasonable fit, values ranging from .08-.10 indicate mediocre fit, and values greater than .10 indicate poor fit (MacCallem et al., 1996). Once a model was deemed to fit the data adequately, parameter estimates were interpreted. Model fit comparisons were conducted using the sample size adjusted Bayesian Information Criterion (BIC). Estimates from models of greater complexity (e.g., Model 2 relative to Model 1) were only examined if the difference in sample size adjusted BIC was not significantly worse using the convention that difference scores of 10 or greater indicate poorer model fit (Burnham & Anderson, 2004).

**Results**

**Preliminary analyses**

 Means and standard deviations of study variables can be found in Table 1 and correlations between study variables can be found in Table 2. Several of the variables violated assumptions of normality thus several iterations of the models were run utilizing different distributions. However, there were no significant differences in outcomes between models using different distributions so linear distributions were retained. The covariance matrix for all study variables can be found in Table 4.

**Model 1. Differences in Mental Health, Marginalization Stressors, and Protective Factors Across Areas**

 Since the model was just-identified, most fit statistics were not available. The sample size adjusted BIC for this model was 12,763.053.

***Aim 1 Mental Health Outcomes*.** Urban cluster (*b* = 4.913, *SE =* 0.793, *p* < .001) and rural (*b* = 3.636, *SE =* 0.793, *p* = .001) participants reported experiencing higher levels of depression than urban participants. There were significant differences between non-urban and urban participants’ experiences of suicidal ideation with urban cluster (*b* = 0.608, *SE =* 0.164, *p* < .001) and rural (*b* = 0.482, *SE =* 0.237= .042) experiencing more suicidal ideation than urban participants. Finally, urban cluster participants (*b* = 3.466, *SE =* 0.656, *p* < .001) reported experiencing higher levels of anxiety than urban participants. Rural participants did not report significantly more symptoms of anxiety than urban participants (*p* = .585).

***Aim 2. Distal Marginalization Stressors.*** There were significant differences between urban cluster and urban participants’ experiences of gender-related rejection (*b* = 0.887, *SE =* 0.306, *p* = .004), discrimination (*b* = 0.650, *SE =* 0.260, *p* = .012), victimization (*b* = 0.764, *SE =* 0.350, *p* = .029), and non-affirmation (*b* = 1.657, *SE =* 0.756, *p* = .028) with urban cluster participants reporting more experiences of these marginalization stressors than urban participants. Compared with urban participants, rural participants reported more experiences of gender-related victimization (*b* = 1.231, *SE =* 0.518, *p* = .017), rejection (*b* = 0.938, *SE =* 0.447, *p* = .036), discrimination (*b* = 0.840, *SE =* 0.412, *p* = .041), and non-affirmation (*b* = -2.588, *SE =* 1,056, *p* = .014). Rural participants reported less experiences of non-affirmation than urban participants (*b* = -2.563, *SE =* 1.136, *p* = .024).

***Aim 2. Proximal Marginalization Stressors.*** Urban cluster (*b* = 2.823, *SE =* 0.970, *p* = .004) but not rural (*p* = .653) participants reported significantly higher internalized transphobia than urban participants. Additionally, urban cluster (*b* = 1.430, *SE =* 0.483, *p* = .003) but not rural (*p* = .298) participants reported significantly more experiences of gender-related rumination than urban participants. There were significant differences between urban cluster and urban participants’ experiences of negative expectations (*b* = 3.624, *SE =* 0.987, *p* < .001), with urban cluster participants reported more experience of negative expectations.

***Aim 2 Protective Factors.*** There were no differences between urban cluster (*p =* .469) and urban participants, and rural (*p* = .465) and urban participants experience of gender-related pride.

**Model 2 and 3. Relationships between area and negative mental health outcomes via proximal and distal marginalization stressors with protective factors moderating these relationships.**

**Aim 3, Model 2:** The tested model is depicted in Figure 1. The model evidenced good model fit across indices, χ2 (7) = 24.28, *p* = .001, CFI = .986, SRMR = .026, RMSEA = .105 (90% CI = .061 - .152). The sample size adjusted BIC for this model was 12,771.601, which was 8.548 higher than for Model 1. Because most indicators demonstrated good model fit and the difference in sample size adjusted BIC was less than 10, this model was examined for tests of indirect effects.

***Distal marginalization stressors predicting proximal marginalization stressors.*** In examining distal marginalization stress variables as predictors of proximal marginalization stress variables, non-affirmation significantly predicted internalized transphobia (*b* = 0.382, *SE =* 0.109 *p* < .001), rumination (*b* = 0.158, *SE =* 0.052, *p* = .002) and negative expectations (*b* = 0.564, *SE =* 0.110, *p* < .001). No other distal marginalization stress variables predicted any other proximal marginalization stress variables (*p* > .05).

 ***Depression.*** Among marginalization stress variables, only discrimination (*b* = 0.697, *SE =* 0.301, *p* = .021), rumination (*b* = 0.488, *SE =* 0.106, *p* < .001), and negative expectations (*b* = 0.223, *SE =* 0.071, *p* = .002) significantly predicted depression. The resulting tests of indirect effects between urban and urban cluster participants and depression through one marginalization stressor (e.g., either distal or proximal) were significant: rumination (*b* = 0.431, 95% CI [0.014,0.977]), negative expectations (*b* = 0.504, 95% CI [0.093.186]) and discrimination (*b =* 0.453, 95% CI [0.055, 1.218]). There were also two significant indirect effects between area and depression through two marginalization stressors (e.g., distal predicting proximal) for urban and urban cluster participants via non-affirmation and negative expectations (*b* = 0.209, 95% CI [.031, 0.563]) and via non-affirmation and rumination *(b* = 0.128, 95% CI [0.030, 0.347]).

Regarding differences between rural and urban residents, there was a significant indirect effect on depression through discrimination (*b* = 0.585, 95% CI [0.028,1.702]). There were also significant indirect effects between two marginalization stressors (e.g., distal predicting proximal) and depression through non-affirmation and negative expectations *(b* = -0.323, 95% CI [-0.880, -0.061]) and non-affirmation and rumination, (*b* = 0.197, 95% CI [-0.548, -0.048]).

 ***Suicidal Ideation.*** When examining marginalization stressors as predictors of suicidal ideation, only discrimination (*b =* 0.212, *SE =* 0.061, *p* < .001) and internalized transphobia (*b =* 0.031, *SE =* 0.014, *p* = .026) significantly predicted suicidal ideation. The resulting tests of indirect effects between urban cluster and urban residents and suicidal ideation through one marginalization stressor (e.g., either distal or proximal) were significant: discrimination (*b* = 0.134, 95% CI [0.030, 0.310]). There was also a significant indirect effect between two marginalization stressors (e.g., distal predicting proximal) and suicidal ideation through non-affirmation and internalized transphobia (*b* = - 0.18, 95% CI [0.001, 0/063]).

Regarding differences between rural and urban residents, there was a significant indirect effect on suicidal ideation through discrimination (*b* = 0.174, 95% CI [0.016,1.420]). There was also a significant indirect effect between two marginalization stressors (e.g., distal predicting proximal) and suicidal ideation through non-affirmation and internalized transphobia *(b* = 0.028, 95% CI [-0.101, -0.003]).

 ***Anxiety.*** Among marginalization stress variables, only rumination (*b* = 0.20, *SE =* 0.095, *p* = .001) and negative expectations (*b* = 0.209, *SE =* 0.057, *p* < .001) significantly predicted anxiety. The resulting tests of indirect effects between area and anxiety through one marginalization stressor (e.g., either distal or proximal) were significant: urban cluster and urban differences accounted for by rumination (*b =* 0.283 95% CI [0.017, 0.744]) and negative expectations (*b =* 0.471, 95% CI [0.089, 1.128]. There were also two significant indirect effects between area and anxiety depression through two marginalization stressors (e.g., distal predicting proximal) of the same differences between urban and urban cluster participants: non-affirmation and rumination (*b* = 0.085, 95% CI [0.018, 0.247]) and non-affirmation and negative expectations (*b =* 0.195, 95% CI [0.037, 0.497]).

Finally, there were also two significant indirect effects between area and anxiety through two marginalization stressors (e.g., distal predicting proximal) rural and urban participants through non-affirmation and rumination (*b* = -0.129, 95% CI [-0.397, -0.034) and through non-affirmation and negative expectations (*b = -*0.302, 95% CI [-0.773, -0.074]).

**Aim 3 Model 2:**

***Protective factors as moderators.*** Estimation of this model yielded satisfactory fit, CFI = .986, RMSEA = .104, SRMR = .025. The sample size adjusted BIC of this model is 14952.427. Gender pride was not a significant moderator so the second model without gender pride as a moderator was retained.

**Discussion**

 Support for our hypotheses were mixed. Consistent with our hypotheses, rural and urban cluster participants reported experiencing higher levels of depression and suicidal ideation than urban participants. Inconsistent with our hypotheses, only urban cluster, but not rural, participants reported experiencing higher levels of anxiety than urban participants. Additionally,urban cluster participants reported more experiences of marginalization stressors (gender-related non-affirmation, negative expectations, rejection, discrimination, rumination, victimization, internalized transphobia) than urban participants. Rural participants reported experiencing more gender-related discrimination, rejection, and victimization but reported experiencing less non-affirmation than urban participants. Although it is not entirely clear why rural participants reported fewer experiences of non-affirmation than urban participants it could be related to whether these participants have disclosed their gender identity to their community. If not, they may not be experiencing non-affirmation in the way that the GMSR captures non-affirmation as many of items assume the respondent has disclosed their gender identity and their identity is subsequently not being affirmed.

 We also sought to determine whether distal and proximal marginalization stressors would account for significant portions of the relationship between area of residence and negative mental health outcomes, with protective factors moderating these relationships. Results indicated non-affirmation of gender identity plays a significant role in mediating the relationships between area of residence, experiences of proximal marginalization stressors, and negative mental health outcomes. Although there is no previous research evidence examining all of these variables together, we do see similar patterns in relationships between experiences of distal and proximal marginalization stress variables and negative mental health outcomes in other studies (e.g., Testa et al., 2017).

Perhaps unsurprising, non-affirmation was the most predictive distal marginalization stressor. Non-affirmation of gender identity can take many forms including misgendering (e.g., incorrect pronoun use, dead naming, etc.) both intentionally or unintentionally by people TGD individuals interact with and may occur with a greater frequency than other forms of distal marginalization. There were indirect effects for urban cluster and rural areas and anxiety via non-affirmation when both negative expectations of future discrimination and prejudice and increased rumination were added to the model. Regarding suicidal ideation we saw indirect effects for urban cluster and rural areas and suicidal ideation via discrimination and via non-affirmation and internalized transphobia suggesting internalizing negative messages and experiences surrounding gender identity may increase experiences of suicidal ideation. Finally, we found an indirect effect between urban cluster and depression via negative expectations and via discrimination. Although it is not entirely clear why discrimination is more salient and influential for urban cluster areas, it could be due to a lack of strong community ties, either with the broader community or TGD communities, other members of urban cluster areas may be more likely to engage in overt discrimination against TGD individuals due to a lower perceived risk of repercussions (e.g., in a small town people may be less likely to engage in overt discrimination due to fear of repercussions or social exclusion). Relatedly, experiences of negative expectations may be more salient and influential for urban cluster areas due to increased experiences of marginalization stressors more broadly. It is likely that more experiences of gender-related rejection, discrimination, non-affirmation, and victimization would lead to a person experiencing more negative expectations that these events would happen in the future. As we see in these results, more experiences of these distal marginalization stressors often lead to higher levels of depressive symptoms.

 Interestingly, our findings did not support our hypothesis that there would be differences between non-urban and urban people on feelings of gender pride. One possible explanation for this finding is that, despite non-urban peoples’ experiences of discrimination, living in a smaller community often offers alternative types of pride based on other pieces of their identity. As we have argued elsewhere (Mocarski et al., 2019), a full understanding of gender identity requires consideration of gender within context such as in Bronfenbrenner’s Socio-Ecological Model (SEM), allowing us to situate the ways that TGD health are influenced by a variety of social determinants and buffering factors. In a rural locale, the variable nature of hegemonic understandings of gender are on display as an out TGD person would be more visible than in a more populace space. Furthermore, given the interconnected nature of rural communities, the community would have reason to interact with TGD community members on a regular basis, thereby complicating the hegemonic understanding of a collapsed binary gender. In short, the outer bands of the SEM would have personal experience with TGD people because they would be unavoidable if out in a community smaller than 2500 people. Conversely, in an urban cluster, there is enough people to be unaware of those who are out, as they would not be integral to all community members’ lives. Another possible explanation is that due to a small rural sample we did not have the power sufficient to test potential differences. It also is possible that there are more biased attitudes towards TGD people in rural areas as other research has shown, but perhaps the lack of anonymity in rural areas prevents people from overtly expressing these sentiments.

 This study extends the current literature as there have been no studies that have compared rates of anxiety, depression, and marginalization stressors between non-urban and urban TGD people. Previous research has looked at rural/urban disparities in rates of mental health disorders, however, this research has only been conducted with presumably cisgender participants (Gamm & Pittman, 2010). Further, those studies that have focused on LGBT communities have examined these communities broadly and together. These results reveal the need for additional research examining mental health disparities in urban versus non-urban TGD populations. Although all areas experienced high levels of distress, people living in urban cluster areas appear to be experiencing the broadest and most severe psychological distress. Finally, these results have implications related to the need for more gender-affirming mental health care in non-urban areas. Gender affirming mental health care in non-urban areas is often scarce and providing these services to TGD people could reduce the rates of depression, anxiety, and suicide in these communities.

 Limitations of the present study include lack of specificity within the urban cluster group, a small rural group, and limited measurement of protective factors. Furthermore, we asked participants to self-select the area in which they lived, providing a large span of population for the urban cluster (between 2,500 and 50,000). Although the U.S. Census Bureau categories have the advantage of being standardized, they may mask diversity of experiences with the categories. In the future, we may elect to collect additional data including parts of the participants’ zip codes to allow for more specificity about their population size. We also had a small rural group with just 25 people. This may have been attributable to our missing data or lack of saturation in the initial sampling. It also is true that not all rural areas are equivalent, and it may be beneficial for future research to also collect information about access to resources and supports in the area to better describe the quality of the environments TGD people are living in beyond population size information. Measurement of protective factors was limited by the poor internal consistency of some of the subscales of the GMSR and GIRRS. It is unclear whether this was a problem just within our sample or whether further research is needed to establish more reliable measures of protective factors. We also did not find any differences between rural and urban participants on suicidal ideation which may be due to the way in which we measured suicidal ideation.

Future research should continue to examine TGD people separately from LGB cisgender people to gain a better understanding of the unique way in which marginalization stress impacts depression and anxiety. This study demonstrates that area of residence is an important factor in TGD health and health disparities. A key result from this study is that the urban cluster group experienced greater levels of anxiety, depression, and marginalization stressors than the other two groups on almost all variables. Rural life offers many benefits such as being a member of a tight-knit community (e.g., Hastings & Cohn, 2013) that may extend to TGD people. Urban life offers TGD people potentially the most social support from other TGD people as well as greater likelihood of access to affirming care. Members of the TGD community who live in urban clusters may lack the benefits of either rural or urban life, increasing risks and distress without affirming community or health care options.

Overall, this study expanded the literature on the importance of place of residence as a context for health disparities. Just as states with protections such as workplace anti-discrimination and hate crime laws that protect LGBT people are associated with improved mental health outcomes for LGBT communities (Blosnich et al., 2016), area of residence may play an important role as well. Future research should consider how health care providers should adjust their approach to meet the needs of TGD individuals in communities of various sizes.

**Conclusions**

 Many TGD people will encounter marginalization stressors and this is associated with greater psychological distress, however, this distress may be heightened in non-urban areas. TGD people in rural areas may experience surprising benefits from the close-knit community, even if they are more isolated from TGD community support available to those living in urban areas. Distal marginalization stressors, particularly non-affirmation, likely warrant attention particularly in non-urban areas where effects of non-affirmation appear to be particularly salient.

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1. Transgender and gender diverse are umbrella terms used to describe individuals whose gender identity or gender expression does not conform to their sex assigned at birth. These individuals may identify as transgender men or transgender women, while others may instead identify as gender nonconforming, non-binary, genderqueer, as man and woman, or as genderfluid (American Psychological Association, 2015). Cisgender is used to describe individuals whose sex assigned at birth matches their gender identity [↑](#footnote-ref-2)